

PATENT ABSTRACTS OF JAPAN

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(54) CHARGE ACCOUNTING DEVICE, INFORMATION TRANSMISSION SYSTEM,  
CHARGE ACCOUNTING METHOD AND STORAGE MEDIUM

(57)Abstract:

PROBLEM TO BE SOLVED: To attain the effective and safe supply of service to a client even though the service object information is equal to the stream type data by issuing a ticket based on the payment information on the client and sending the ticket to the client via a charge accounting server.

SOLUTION: A client 130 gives a request to a charge accounting server 120 to purchase a ticket. If the settlement information on the request given from the client 130 is right, the server 120 gives a ticket issue request to a camera server 110. Thus, the server 110 issues a ticket to register it in a connecting ticket register DB 115 and also to return it to the server 120. The server 120 sends the returned ticket to the client 130 as a connecting ticket. The client 130 gives a video service request (connection request) to the server 110 by means of the connecting ticket.

[Claim(s)]

[Claim 1] Accounting equipment which is characterized by providing the following and which is charged to the service with which the server provided this client based on the service request from a client. A storage means to memorize the predetermined information about the above-mentioned client. A purchase demand receptionist means to receive the purchase demand of the ticket used in case a service request is transmitted to the above-mentioned server from the above-mentioned client. A judgment means to judge the justification of the demand received with the above-mentioned purchase demand receptionist means based on the information on the above-mentioned storage means. A ticket demand means to require issue of the above-mentioned ticket of the above-mentioned server based on the judgment result in the above-mentioned judgment means, an accounting means perform accounting to the service which the above-mentioned client receives based on the judgment result in the above-mentioned judgment means, and a transmitting means transmit the ticket returned from the above-mentioned server by the demand by the above-mentioned ticket demand means to the above-mentioned client.

[Claim 2] The above-mentioned service is accounting equipment according to claim 1 characterized by the thing of the right of photography motion control at the time of obtaining the speech information acquired in the above-mentioned server, image information, and this image included for any they are at least.

[Claim 3] The information on the above-mentioned ticket is accounting equipment according to claim 1 characterized by the thing of the information for discriminating the above-mentioned client generated in the above-mentioned server, a hour entry with the above-mentioned client able to receive service from the above-mentioned server, and the electronic signature information generated in the above-mentioned server included for any they are at least.

[Claim 4] The information on the above-mentioned ticket is accounting equipment according to claim 1 characterized by being the information enciphered with the predetermined cipher system in the above-mentioned server.

[Claim 5] It is the information transmission system which the service provision server which transmits the information corresponding to the service demanded from arbitrary clients to this client, and the accounting server charged to the service with which the above-mentioned client was provided are the information transmission systems which it comes to connect on the same network with the above-mentioned client, and is characterized by for the above-mentioned accounting server to have the function of accounting equipment given in any of claims 1-4 they are.

[Claim 6] The service provision server which transmits the information corresponding to the service demanded from arbitrary clients to this client, The accounting server which the above-mentioned client charges to the service received from the above-mentioned service provision server It is the information transmission system which it comes to connect on the same network with the above-mentioned client. the above-mentioned client A means to transmit the purchase demand of the ticket used in case a service request is transmitted to the above-mentioned service provision server to the above-mentioned accounting server, A means to transmit a service

request to the above-mentioned service provision server using the ticket returned by this ticket purchase demand from the above-mentioned accounting server is included. the above-mentioned accounting server A means to memorize the information about the above-mentioned client, and a means to judge the justification of the ticket purchase demand from the above-mentioned client based on this storage information, A means to transmit the issue demand of a ticket to the above-mentioned service provision server based on this judgment result, A means to perform settlement-of-accounts processing to the service which the above-mentioned client receives based on the above-mentioned judgment result, A means to transmit the ticket returned by the above-mentioned ticket issue demand from the above-mentioned service provision server to the above-mentioned client is included. the above-mentioned service provision server A means to generate a ticket based on the ticket issue demand from the above-mentioned accounting server, A means to memorize the information on this ticket, and a means to transmit this ticket to the above-mentioned accounting server, The information transmission system characterized by including a means to receive the service request from the above-mentioned client, a means to judge the justification of the above-mentioned service request from the above-mentioned storage information, and a means to transmit the information based on the above-mentioned service request to the above-mentioned client based on this judgment result.

[Claim 7] The above-mentioned service is an information transmission system according to claim 6 characterized by including at least any they are and the above-mentioned service provision server including a means to judge whether the client of the above-mentioned service request origin has the right of the right of photography motion control at the time of obtaining speech information, image information, and this image which receives the above-mentioned service.

[Claim 8] A means to generate the above-mentioned ticket in the above-mentioned service provision server is an information transmission system according to claim 6 characterized by generating the ticket of a hour entry with the information and the above-mentioned client able to receive service for discriminating the above-mentioned client which includes which information at least.

[Claim 9] A means for a means for a means to generate the above-mentioned ticket to generate a ticket with a predetermined cipher system in the above-mentioned service provision server, and to receive the above-mentioned service request to decrypt the above-mentioned ticket used for this service request, and to judge the justification of the above-mentioned service request is an information transmission system according to claim 6 characterized by performing the judgment with the ticket by which the decryption was carried out [ above-mentioned ].

[Claim 10] A means for a means to generate the above-mentioned ticket to generate a ticket including predetermined electronic signature in the above-mentioned service provision server, and to judge the justification of the above-mentioned service request is an information transmission system according to claim 6 characterized by performing the judgment by the electronic signature in the above-mentioned ticket used for the above-mentioned service request.

[Claim 11] The accounting method for performing accounting to the service which a client receives from a service provision server because the client characterized by providing the following transmits a service request to a service provision server in an accounting server. The step which transmits the purchase demand of the ticket which it uses in case the above-mentioned client transmits a service request to the above-mentioned service provision server to the above-mentioned accounting server. The step which performs settlement-of-accounts processing to the service which the above-mentioned client receives while the above-mentioned accounting server judges the justification of the ticket purchase demand from the above-mentioned client and transmits the issue demand of a ticket to the above-mentioned service provision server based on this judgment result based on the information about the above-mentioned client memorized beforehand. The step which transmits this ticket to the above-mentioned accounting server while the above-mentioned service provision server generates a ticket and memorizes the information on this ticket based on the ticket issue demand from the above-mentioned accounting server. The step at which the above-mentioned accounting server transmits the ticket returned from the above-mentioned service provision server to the above-mentioned client by the above-mentioned ticket issue demand, and the above-mentioned client by the above-mentioned ticket purchase demand The step which transmits a service request to the above-mentioned service provision server using the ticket returned from the above-mentioned accounting server, The step which the above-mentioned service provision server receives the service request from the above-mentioned client, judges the justification of \*\* and the above-mentioned service request from the storage information on the above-mentioned ticket, and transmits the information based on the above-mentioned service request to the above-mentioned client based on this judgment result.

[Claim 12] The above-mentioned service is the accounting method according to claim 11 characterized by including at least any they are and including the step which judges whether the above-mentioned service provision server has the right of the right of photography motion control at the time of obtaining speech information, image information, and this image in which the client of the above-mentioned service request origin receives the above-mentioned service.

[Claim 13] The accounting method according to claim 11 characterized by including the step of a hour entry with the information and the above-mentioned client able to receive service for the above-mentioned service provision server discriminating the above-mentioned client for the above-mentioned ticket generated including which information at least.

[Claim 14] The accounting method according to claim 11 characterized by including the step which decrypts the above-mentioned ticket used for this service request, and performs justification of this service request with the ticket by which the decryption was carried out [ above-mentioned ] when the above-mentioned service provision server generates the above-mentioned ticket and receives the service request from the above-mentioned client with a predetermined cipher system.

[Claim 15] The accounting method according to claim 11 characterized by including the step which performs justification of the above-mentioned ticket used for this service request by the electronic signature in the above-mentioned ticket when the

above-mentioned service provision server generates the above-mentioned ticket including predetermined electronic signature and receives the service request from the above-mentioned client.

[Claim 16] The storage characterized by storing the accounting method given in any of claims 11-15 they are possible [ read-out of a computer ].

## [Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] In case this invention offers service of stream information, such as an image and voice, to a client side through a network, it relates to the technology for charging to the service which this client side receives.

[0002]

[Description of the Prior Art] The information transmission system which offers service of media data, such as an image and voice, to two or more client sides connected on the network through networks, such as the Internet, conventionally is developed. Specifically, "RealAudio", "RealVideo", "VDO Live", etc. are mentioned. Moreover, as a system which can perform camera operations, such as zoom and a panti-tilt, from a client side, "WebView" of Canon, Inc. etc. is mentioned to the image pick-up equipment on a network.

[0003] By the way, in the above information transmission systems, when charging to digital contents, such as an image which transmits to a client side with the service request, and a still picture, MIDI data, it is common that the following accounting methods are used. First, payment systems, such as a credit card number, are beforehand notified to the side (henceforth a "contents server side") which offers service from the client side. And a contents server side gives the \*\*\*\*\* notice of the confidential information, such as a user name and a password, after checking the payment system of a client side. Thereby, a client side becomes possible [ receiving digital contents ].

[0004] However, by the above-mentioned accounting method, since there was time and effort which a client side must notify that information with a private credit card number etc. is to a contents server side and to which a client side must carry out user registration as it is uneasy, there was a problem of being hard to spread. Moreover, it was difficult for the problem that a commission cannot cleave a labor cost easily in order to check the problem that it cannot perform bank pulling down if it does not become a certain amount of [ when performing small sum settlement of accounts for this reason ] amount of money, and settlement of a small sum to be for the contents server side which is the side which offers service to perform bank pulling down and credit settlement of accounts, therefore to perform small sum settlement of accounts to it on-line.

[0005] Then, in order to solve the above problems, in recent years, the accounting system and cybermoney method which enable the small sum settlement of accounts which held anonymity and was automated have appeared. When a contents server side offers small sum service by this, it is expected that the technique of building the information transmission system using the accounting system (henceforth an "accounting server") which executes a settlement service by proxy becomes in use, without performing a settlement service by the contents server side. As an accounting system with these features, "BitCash" of a BitCash company, "CyberCash" in CyberCash woods, "CyberCoin", etc. are mentioned.

[0006]

[Problem(s) to be Solved by the Invention] However, although a client side may be able to be attested by the accounting server side with the information transmission system using the conventional accounting servers, such as "BitCash", since the information on a client side was not transmitted, it was difficult [ it ] for the contents server side which is the side which offers service in many cases to attest a client side by the contents server side. For this reason, in the contents server side, the security measure needed to be made severe.

[0007] moreover, as data actually dealt with by the above-mentioned conventional accounting server Although there is much accumulated type data with comparatively small data, such as a static image and soft download, and it is common to transmit these data to a client side through an accounting server when service of such data is required from a client side When the data set as the object of service are stream type data, such as an image, and data transmission which went via the accounting server is performed, there is a problem that the network-load of an accounting server is large.

[0008] Then, this invention was accomplished in order to remove the above-mentioned fault, and even if the information for service is stream type data, it aims at offering the storage which stored the processing step for carrying out the accounting equipment which can offer service to a client side efficiently and safely, an information transmission system, the accounting method, and it possible [ read-out of a computer ].

[0009]

[Means for Solving the Problem] If a client pays a countervalue to the bottom of this purpose for example, by the accounting server by this invention, the information is transmitted to a service provision server (contents servers, such as a camera server which offers the image obtained with image pick-up equipment, and voice) from an accounting server, based on the information, by the contents server side, a ticket (ticket for connection) will be published and air conditioner IANTOHE transmission will be carried out through an accounting server. A client connects with a service provision server with this ticket for connection. Thereby, the service (information, such as an image and voice) which the client required does not go via an accounting server. Moreover, by embedding the password for discriminating the hour entries (time which can view and listen to an image or voice) which can connect a client, a ticket number, and a client etc. to the ticket for connection, where the anonymity of a client is maintained, client authentication can be performed.

[0010] Namely, a storage means for the 1st invention to be accounting equipment charged to the service with which the server provided this client based on the service request from a client, and to memorize the predetermined information about the above-mentioned client, A purchase demand receptionist means to receive the purchase demand of the ticket used in case a service request is transmitted to the above-mentioned server from the above-mentioned client, A judgment means to judge the justification of the demand received with the above-mentioned purchase demand receptionist means based on the information on the above-mentioned storage means, A ticket demand means to require issue of the above-mentioned ticket of the above-mentioned server based on the judgment result in the above-mentioned judgment means, It is characterized by having an accounting means to

perform accounting to the service which the above-mentioned client receives, and a transmitting means to transmit the ticket returned by the demand with the above-mentioned ticket demand means from the above-mentioned server to the above-mentioned client, based on the judgment result in the above-mentioned judgment means.

[0011] 2nd invention is characterized by the thing of the right of photography motion control at the time of the above-mentioned service obtaining the speech information acquired in the above-mentioned server, image information, and this image included for any they are at least in the 1st above-mentioned invention.

[0012] 3rd invention is characterized by the thing of the information for discriminating the above-mentioned client generated in the above-mentioned server, a hour entry with the above-mentioned client able to receive service from the above-mentioned server, and the electronic signature information generated in the above-mentioned server included for any they are at least in the 1st above-mentioned invention by the information on the above-mentioned ticket.

[0013] 4th invention is characterized by the information on the above-mentioned ticket being information enciphered with the predetermined cipher system in the above-mentioned server in the 1st above-mentioned invention.

[0014] The 5th invention is an information transmission system with which it comes to connect the service provision server which transmits the information corresponding to the service demanded from arbitrary clients to this client, and the accounting server charged to the service with which the above-mentioned client was provided on the same network with the above-mentioned client, and it carries out that the above-mentioned accounting server has the function of accounting equipment given in any of claims 1-4 they are as the feature.

[0015] The service provision server which transmits the information corresponding to the service demanded from clients with the 6th arbitrary invention to this client, The accounting server which the above-mentioned client charges to the service received from the above-mentioned service provision server It is the information transmission system which it comes to connect on the same network with the above-mentioned client. the above-mentioned client A means to transmit the purchase demand of the ticket used in case a service request is transmitted to the above-mentioned service provision server to the above-mentioned accounting server, A means to transmit a service request to the above-mentioned service provision server using the ticket returned by this ticket purchase demand from the above-mentioned accounting server is included. the above-mentioned accounting server A means to memorize the information about the above-mentioned client, and a means to judge the justification of the ticket purchase demand from the above-mentioned client based on this storage information, A means to transmit the issue demand of a ticket to the above-mentioned service provision server based on this judgment result, A means to perform settlement-of-accounts processing to the service which the above-mentioned client receives based on the above-mentioned judgment result, A means to transmit the ticket returned by the above-mentioned ticket issue demand from the above-mentioned service provision server to the above-mentioned client is included. the above-mentioned service provision server A means to generate a ticket based on



the ticket issue demand from the above-mentioned accounting server, A means to memorize the information on this ticket, and a means to transmit this ticket to the above-mentioned accounting server, It is characterized by including a means to receive the service request from the above-mentioned client, a means to judge the justification of the above-mentioned service request from the above-mentioned storage information, and a means to transmit the information based on the above-mentioned service request to the above-mentioned client based on this judgment result.

[0016] 7th invention is characterized by the above-mentioned service including a means by which it is included at least any they are and the above-mentioned service provision server judges whether it has the right of the right of photography motion control at the time of obtaining speech information, image information, and this image in which the client of the above-mentioned service request origin receives the above-mentioned service in the 6th above-mentioned invention.

[0017] A means by which invention of the octavus generates the above-mentioned ticket in the above-mentioned service provision server in the 6th above-mentioned invention is characterized by generating the ticket of a hour entry with the information and the above-mentioned client able to receive service for discriminating the above-mentioned client which includes which information at least.

[0018] A means for a means by which a means to generate the above-mentioned ticket in the above-mentioned service provision server in the 6th above-mentioned invention generates a ticket with a predetermined cipher system, and the 9th invention receives the above-mentioned service request to decrypt the above-mentioned ticket used for this service request, and to judge the justification of the above-mentioned service request carries out performing the judgment with the ticket by which the decryption was carried out [ above-mentioned ] as the feature.

[0019] A means by which a means to generate the above-mentioned ticket in the above-mentioned service provision server in the 6th above-mentioned invention generates a ticket including predetermined electronic signature, and the 10th invention judges the justification of the above-mentioned service request is characterized by performing the judgment by the electronic signature in the above-mentioned ticket used for the above-mentioned service request.

[0020] The 11th invention is that a client transmits a service request to a service provision server. Accounting to the service which a client receives from a service provision server The step which transmits the purchase demand of the ticket which is the accounting method for carrying out in an accounting server, and it uses in case the above-mentioned client transmits a service request to the above-mentioned service provision server to the above-mentioned accounting server, The above-mentioned accounting server is based on the information about the above-mentioned client memorized beforehand. While judging the justification of the ticket purchase demand from the above-mentioned client and transmitting the issue demand of a ticket to the above-mentioned service provision server based on this judgment result While the above-mentioned service provision server generates a ticket and remembers the information on this ticket to be the step which performs settlement-of-accounts processing to the service which the above-mentioned client receives based

on the ticket issue demand from the above-mentioned accounting server The step which transmits this ticket to the above-mentioned accounting server, and the above-mentioned accounting server by the above-mentioned ticket issue demand The step which transmits the ticket returned from the above-mentioned service provision server to the above-mentioned client, and the above-mentioned client by the above-mentioned ticket purchase demand The step which transmits a service request to the above-mentioned service provision server using the ticket returned from the above-mentioned accounting server, The above-mentioned service provision server receives the service request from the above-mentioned client. \*\*, The justification of the above-mentioned service request is judged from the storage information on the above-mentioned ticket, and it is characterized by including the step which transmits the information based on the above-mentioned service request to the above-mentioned client based on this judgment result.

[0021] 12th invention is characterized by including at least any they are and the above-mentioned service containing the step which judges whether the above-mentioned service provision server has the right of the right of photography motion control at the time of obtaining speech information, image information, and this image in which the client of the above-mentioned service request origin receives the above-mentioned service in the 11th above-mentioned invention.

[0022] 13th invention is characterized by including the step of a hour entry with the information and the above-mentioned client able to receive service for the above-mentioned service provision server discriminating the above-mentioned client for the above-mentioned ticket generated including which information at least in the 11th above-mentioned invention.

[0023] In the 11th above-mentioned invention, when the above-mentioned service provision server generates the above-mentioned ticket and receives the service request from the above-mentioned client with a predetermined cipher system, the 14th invention decrypts the above-mentioned ticket used for this service request, and is characterized by including the step which performs justification of this service request with the ticket by which the decryption was carried out [ above-mentioned ].

[0024] In the 11th above-mentioned invention, 15th invention is characterized by including the step which performs justification of the above-mentioned ticket used for this service request by the electronic signature in the above-mentioned ticket, when the above-mentioned service provision server generates the above-mentioned ticket including predetermined electronic signature and receives the service request from the above-mentioned client.

[0025] 16th invention is characterized by being the storage which stored the accounting method given in any of claims 11-15 they are possible [ read-out of a computer ].

[0026]

[Embodiments of the Invention] Hereafter, the gestalt of operation of this invention is explained using a drawing.

[0027] (Gestalt of the 1st operation) this invention is applied to the information transmission system 100 as shown in drawing 1 . As shown in above-mentioned drawing 1 , this information transmission system 100 is a system only with the client side able to receive service of an image which paid the charge, and it connects on computer networks, such as the Internet, respectively, and the camera server 110 which offers service of an image, the client 130 which requires service of an image, and the accounting server 120 which performs accounting to the service which the client 130 required are constituted so that two way communication may be possible. In addition, although each shows one camera server 110 and the client 130 by above-mentioned drawing 1 since explanation is easy, it is good also as that in which two or more each exists.

[0028] The camera server 110 acquires the image based on the service request of the image from a client 130, and transmits the image to a client 130 while it publishes the ticket based on the ticket issue demand from the accounting server 120 mentioned later. For this reason, the camera equipment 111 which digitizes the image information which the camera server 110 photoed the photographic subject and was acquired, The image acquisition section 113 which acquires the image information acquired with camera equipment 111, The image transmitting section 114 which transmits the image information acquired in the image acquisition section 113 to a client 130 through a network, the database for the connection ticket registration for accumulating the information on the published ticket (DB) -- 115 -- While publishing a ticket based on the ticket issue request received in the ticket issue request receptionist section 116 which receives the ticket issue request transmitted from the accounting server 120, and the ticket issue request receptionist section 116 The ticket issue section 117 which accumulates the ticket information to DB115 for connection ticket registration (registration), The ticket transmitting section 118 which transmits the ticket published in the ticket issue section 117 to the accounting server 120, The image demand receptionist section 119 which receives the service request of the image using the ticket for connection later mentioned from a client 130, It comes to contain the ticket judging section 112 which checks the service request received in the image demand receptionist section 119 based on the ticket information on DB115 for connection ticket registration. In addition, camera equipment 111 may be one apparatus camera equipment which contained the mechanism in which the image information photoed and acquired was digitized, and may be equipped with the mechanism in which the above digitizes, with the gestalt of another board.

[0029] The accounting server 120 transmits the information based on it to the camera server 110 by the ticket purchase demand from a client 130, and transmits to a client 130 by using as the ticket for connection the ticket answered from the camera server 110. for this reason -- accounting -- a server -- 120 -- accounting -- \*\* -- confidential information -- etc. -- accumulating -- a sake -- a database -- (-- DB --) - - 121 -- a client -- 130 -- from -- a ticket -- purchase -- a demand (although mentioned later for details) The purchase receptionist section 122 which receives the demand including information, such as goods to buy, the content of service, and accounting information The accounting information judging section 123 which judges the justification of the purchase demand received in the purchase receptionist section 122 based on the information on accounting information DB121, The ticket issue request transmitting section 124 which requires the issue request of camera server

110 HECHIKETTO based on the judgment result of the accounting information judging section 123, it comes to contain the ticket receive section 125 which receives the ticket published by the camera server 110, and the ticket transmitting section 126 which transmits to a client 130 by using as the ticket for connection the ticket received by the ticket receive section 125.

[0030] A client 130 comes to contain the ticket purchase demand section 131 which requires the purchase of a ticket of the accounting server 120, the ticket receive section 132 which receives the ticket for connection from the accounting server 120, the image demand section 133 which carries out the camera server 110 HE demand of the service of an image using the ticket for connection received by the ticket receive section 132, and the image receive section 134 which carries out a screen display etc. while receiving the image from the camera server 110.

[0031] Operation of the above whole image transmission system 100 turns into operation according to the flow chart shown in drawing 2.

[0032] Step S201: A client 130 performs the purchase demand (demand for viewing and listening of the image obtained by the camera server 110) of a ticket to the accounting server 120. The accounting information (henceforth "settlement-of-accounts information") mentioned later, the information on an image (a camera server name, image stream name, etc.) for which it wishes, the information on a connect time with the camera server for which it wishes are included in the demand information at this time.

[0033] Step S202: The accounting server 120 requires ticket issue from the camera server 110, when the settlement-of-accounts information on the demand from a client 130 is just.

[0034] Step S203: Return the camera server 110 to the accounting server 120 while it publishes a ticket and registers it to DB115 for connection ticket registration by the demand from the accounting server 120. The accounting server 120 transmits to a client 130 by using as the ticket for connection the ticket returned from the camera server 110.

[0035] Step S204: A client 130 requires service of the image to the camera server 110 using the ticket for connection from the accounting server 120 (connection request).

[0036] Step S205: By the demand from a client 130, the camera server 110 checks the content of the ticket for connection used for it from the content of the ticket previously registered to DB115 for connection ticket registration, when it is the right demand, acquires the image according to the demand, and transmits it to a client 130.

[0037] Step S206: Receive the image from the camera server 110 and, as for a client 130, a screen display etc. carries out it.

[0038] Here, drawing 3 shows operation at the time of paying one's attention to a client 130, drawing 4 shows operation at the time of paying one's attention to the

accounting server 120, and drawing 5 (a) and (b) show operation at the time of paying one's attention to the camera server 110. Hereafter, each operation is explained concretely.

[0039] (1) Processing in a client 130 (refer to above-mentioned drawing 3 )

Step S301: The ticket purchase demand section 131 requires ticket purchase from the accounting server 120 (viewing-and-listening demand). Settlement-of-accounts information, a camera server name and an image stream name, and a connect time are contained in this demand. Here, settlement-of-accounts information is cybermoney, card information on a prepaid card method, etc., and points out the information (a code, password, etc.) specified by the site which performs online small sum settlement of accounts. It is information as specifically shown in drawing 6 .

Step S302: A client 130 goes into a ticket receiving waiting state after the demand of ticket purchase from the accounting server 120 in the ticket receive section 132 in Step S301.

Step S303 - Step S305: If the ticket receive section 132 receives the ticket for connection from the accounting server 120 (Step S303), the image demand section 133 will require service of an image from the camera server 110 using the information on the ticket for connection (Step S304). Then, a client 130 goes into the receiving waiting state of the image from the camera server 110 in the image receive section 134. Step S306: If the image from the camera server 110 is received, as for the image receive section 134, a screen display etc. will carry out it.

[0040] (2) Processing in the accounting server 120 (refer to above-mentioned drawing 4 )

Step S401: The purchase receptionist section 122 receives the ticket purchase demand ( drawing 3 : above step S301 reference) from a client 130.

Step S402: The accounting information judging section 123 checks the settlement-of-accounts information (accounting information) included in the demand received in the purchase receptionist section 122 using the information accumulated at accounting information DB121.

Step S403: and the accounting information judging section 123 distinguish whether the demand from a client 130 is just in Step S402 as a result of a check. As a result of this distinction, only when it is the right demand, it progresses to processing from the following step S404, and when that is not right, this demand is disregarded.

Step S404 - Step S406: When the demand (settlement-of-accounts information) from a client 130 is right, the accounting information judging section 123 actually performs settlement-of-accounts processing (Step S404), and requires issue of a ticket from the camera server 110 (Step S405). Information, such as a camera server name included in a demand from a client 130, an image stream name, and a connect time, is also included in this demand. Then, the accounting server 120 goes into a ticket receiving waiting state from the camera server 110 in the ticket receive section 125 (Step S406).

Step S407: If the ticket receive section 125 receives the ticket from the camera server 110, the ticket transmitting section 126 will transmit to a client 130 by using the ticket as the ticket for connection.

[0041] (3-1) Ticket issue processing in the camera server 110 (refer to above-mentioned drawing 5 (a))

Step S501: The ticket issue request section 116 receives the demand ( drawing 4 : above step S405 reference) of the ticket issue from the accounting server 120.

Step S502: Based on the demand received in the ticket issue request section 116, the ticket issue section 117 publishes a ticket and registers it to DB115 for connection ticket registration. While the camera server name included in the demand of the ticket issue from the accounting server 120 as information on this ticket, an image stream name, a connect time, etc. are included, confidential information, such as a ticket number, ticket issue time, and a password, is also included. It considers as information as specifically shown in drawing 7 .

Step S503: The ticket transmitting section 118 transmits to the accounting server 120 by using as the ticket for connection the ticket published in the ticket issue section 117.

[0042] (3-2) Image offer processing in the camera server 110 (refer to above-mentioned drawing 5 (b))

Step S504: The image demand receptionist section 119 receives the service request ( drawing 3 : above step S304 reference) of the image from a client 130.

Step S505: Perform the ticket judging section 112 by referring to the information registered into DB115 for connection ticket registration in the judgment of the justification of the items mentioned of the ticket for connection currently used for the demand received in the image demand receptionist section 119. As a matter which judges here, a camera server name and an image stream name, and the present time consider as the matter about whether a ticket number and a password are right whether it is within a time [ connectable ], for example.

Step S506: When the ticket for connection in Step S505 used for the above-mentioned demand as a result of the judgment is just, processing of the following step S507 is performed, and this demand is disregarded when that is not right.

Step S507: When the demand from a client 130 is just, the image transmitting section 114 transmits the image acquired in the image acquisition section 113 to a client 130.

[0043] In addition, the camera server 110 is made as [ perform / processing which consisted of two threads of the thread (processing of above-mentioned drawing 5 (a)) which repeats and processes Steps S501-S503, and the thread (processing of above-mentioned drawing 5 (b)) which repeats and processes Steps S504-S507 ], and these are made as / carry out / cooperation operation / mediating DB115 for connection ticket registration ].

[0044] As mentioned above, the camera server 110 published the ticket for connection for receiving service, and the client 130 carried out the service request of the download of an image etc. to the camera server 110 using the ticket for connection, and when the camera server 110 offered this service to the client 130 with the service request, it constituted from a gestalt of this operation so that it might charge by the accounting server 130 to service of the ticket for connection. It can charge to the service which a client 130 receives, without applying a network-load to the accounting server 130 by this, without minding the accounting server 130 for these data, even if the data for service are stream information like an image stream. Moreover, it can charge, without the camera server 110 knowing private information, such as a card number of a client 130, independently [ the accounting server 130 ] having an authentication mechanism by the camera server 110 (offer side of

service), i.e., by having constituted so that the ticket for connection might be published by the camera server 110 and the authentication information might be managed by the camera server 110. This not only can maintain the anonymity of a client 130 to the camera server 110, but can save the time and effort which makes a security measure severe also for the camera server 110, and the advantage in which employment becomes very easy also exists.

[0045] In addition, although considered as the composition which forms the original accounting server 120 with the gestalt of above-mentioned operation, you may substitute for the accounting server 120 the existing accounting infrastructures ("BitCash" in BitCash woods, "CyberCash" of CyberCash, Inc., "CyberCoin", etc.) which have an equivalent function, for example.

[0046] Moreover, it is also possible to raise security level further because it is made to encipher SSL etc. by communication between the camera server 110, a client 130, and the accounting server 120.

[0047] Moreover, although the password was written in this ticket when publishing a ticket by the camera server 110 (above-mentioned drawing 5 (a):step S502 reference), the onetime password which the password of fixation is sufficient as and is created for every connection as this password, for example is sufficient. In the case of a onetime password, password creation processing is added during processing at the above-mentioned step S502. When the level of security is not called for so much, you may make it not use a password on the other hand.

[0048] Moreover, in case a ticket is published by the camera server 110 (above-mentioned drawing 5 (a):step S502 reference), you may make it add the electronic signature of the ticket itself to this ticket. Since existence of the alteration by those who received the client 130 of a transmission place and other tickets unjustly can be checked by this, it becomes possible to raise safety more. In this case, during processing of the above-mentioned step S502, while adding the processing which creates electronic signature, and the processing which writes electronic signature in a ticket, the electronic signature check processing in a ticket is added during processing of Step S505 of above-mentioned drawing 5 (b).

[0049] Moreover, in case a ticket issue demand request is performed by the accounting server 120 ( drawing 4 : above step S405 reference), you may make it add electronic signature to the data itself. This becomes possible prevention of the unjust ticket issue request demand by the third person, and to prevent an alteration, and it becomes possible to raise more the security between the accounting server 120 and the KAMERA server 110. In this case, the public keys (public key of an unsymmetrical key cipher system etc.) of the accounting server 120 are beforehand generated to the accounting server 120 side, and the public key is registered into the camera server 110. Moreover, while adding the processing which creates and transmits electronic signature during processing of the above-mentioned step S405, the processing which checks electronic signature during processing of Step S501 of above-mentioned drawing 5 (a) is added.

[0050] (Gestalt of the 2nd operation) With the gestalt of this operation, in the information transmission system 100 of above-mentioned drawing 1 , service of an



image receiving right, a voice receiving right, the right of camera control, etc. is also offered, and it charges to this.

[0051] For example, an information transmission system 100 has the function in which the operation of the zoom of camera server 110 HE \*\*\*\*\* and camera equipment 111, a pan, a tilt, etc. of a camera-control command is attained from a client 130, and the function to incorporate voice, like "WebView" of Canon, Inc. Moreover, it is referred to as three, an image receiving right, a voice receiving right, and the right of camera control, as service which the camera server 110 offers.

[0052] When the above information transmission systems 100 are systems with two or more contents of service, or functions, different attribute value for every these service and function is given to the ticket for connection. Specifically, "B" and attribute value at the time of choosing all image receiving rights, the voice receiving rights, and rights of camera control are set [ the attribute value at the time of choosing an image receiving right and a voice receiving right ] to "C" for "A" and the attribute value at the time of choosing an image receiving right and the right of camera control. In addition, you may make it give not only attribute value, such as "A" and "B" which show the combination of service, and "C", but the combination of service to the ticket for direct files as information given to the ticket for connection. For example, the content of "service: Only camera control writes information, such as " and "content of service:voice + camera control", in the ticket for direct files.

[0053] For this reason, in processing by the camera server 110 shown in above-mentioned drawing 5 (a) and (b), the processing which writes the above-mentioned attribute value in a connection ticket during processing of Step S502 is added. Moreover, into Step S505, it is at the image transmitting time, and in case a ticket check is performed, the processing which also doubles and checks attribute value is added. Furthermore, the processing which determines the service distributed by attribute value during processing of Step S507 is added. You may make it give priority to the transmitting origin (client) of the ticket which has the predetermined attribute value defined beforehand at this time.

[0054] Moreover, in case a client 130 publishes a ticket purchase demand to the accounting server 120, I have it chosen to give [ to wish one's service ], and distinction of the above-mentioned service is made by this selection information being told with a camera server 110 HECHIKETTO issue demand.

[0055] As mentioned above, with the gestalt of this operation, an attribute and priority are given to the ticket for connection and it was made to distinguish the content of service of a client 130 by the camera server 110 based on it. The effect that the thing which were mentioned above and for which differentiation of service is attained becomes [ as for this ] possible in addition to the effect in the gestalt of the 1st operation can also be acquired.

[0056] In addition, the purpose of this invention cannot be overemphasized by being attained by supplying the storage which memorized the program code of the software which realizes the host of the gestalt of each operation mentioned above, and the function of a terminal to a system or equipment, and reading and performing the program code with which the computer (or CPU and MPU) of the system or



equipment was stored in the storage. In this case, the program code itself read from the storage will realize the function of the gestalt of each operation, and the storage which memorized the program code will constitute this invention. As a storage for supplying a program code, ROM, a floppy disk, a hard disk, an optical disk, a magneto-optic disk, CD-ROM, CD-R, a magnetic tape, nonvolatile memory card, etc. can be used. Moreover, being contained, when the function of the gestalt of each operation is not only realized, but it performs a part or all of processing that OS which is working on a computer is actual, based on directions of the program code and the function of the gestalt of each operation is realized by the processing cannot be overemphasized by performing the program code which the computer read. Furthermore, being contained, when a part or all of processing that CPU with which the expansion board and expansion unit are equipped is actual is performed and the function of the gestalt of each operation is realized by the processing based on directions of the program code, after the program code read from the storage is written in the memory with which the expansion unit connected to the extension board inserted in the computer or the computer is equipped cannot be overemphasized.

[0057]

[Effect of the Invention] As explained above, in case a client receives service (service which offers the image obtained with image pick-up equipment, voice, etc.) from a service provision server, by this invention, a client requires ticket purchase of an accounting server first. An accounting server checks the client which transmitted the ticket purchase demand with reference to the information on the client beforehand memorized in the database etc. (confidential information for accounting, such as a credit number of a client), and it transmits the demand of ticket issue to a service provision server while it will perform settlement-of-accounts processing, if it is the right client. A service provision server memorizes the information in a database etc. while it generates a ticket (ticket for connection) and returns it to an accounting server based on the ticket issue demand from an accounting server. An accounting server transmits the ticket returned from the service provision server to a client. Therefore, using the ticket returned from the accounting server, a client connects with a service provision server and transmits a service request. The service provision server which received this offers service to a client, when it checks by referring to the information which memorized previously the justification of the ticket used when a client was a service request in the database etc. and the right thing is checked. Thus, it can charge to the service which a client receives, without this information applying a network-load to an accounting server, without minding an accounting server, even if the services which a service provision server offers by having constituted are stream information, such as an animation and voice.

[0058] Moreover, it can charge to the service which a client receives, without knowing information with the private credit card number of a client etc. (confidential information for accounting) apart from an accounting server at a service provision server side having an authentication mechanism by the service provision server side, i.e., by publishing ticket issue by the service provision server side, and managing the authentication information by the service provision server side. This not only can maintain the anonymity of a client to a service provision server side, but can save the time and effort which makes a security measure severe also for a service provision server side, and the advantage in which employment becomes very easy also exists.

[0059] Furthermore, when the services which a service provision server offers are two or more services, For example, image information, speech information, and the right of photography motion control (in the case of having the mechanism which enables a service provision server to operate image pck-up equipment from the remote place connected in the network etc.) When it is service, such as a control of this image pck-up equipment, differentiation of service can also be achieved by giving the combination or all the attributes of service of these plurality to a ticket.

[0060] Therefore, according to this invention, even if the information for service is stream type data, service to a client side can be offered efficiently and safely.

### [Brief Description of the Drawings]

[Drawing 1] In the gestalt of the 1st operation, it is the block diagram showing the composition of the information transmission system which applied this invention.

[Drawing 2] It is a flow chart for explaining operation by the above-mentioned whole information transmission system.

[Drawing 3] It is a flow chart for explaining operation of the client of the above-mentioned information transmission system.

[Drawing 4] It is a flow chart for explaining operation of the accounting server of the above-mentioned information transmission system.

[Drawing 5] It is a flow chart for explaining operation of the camera server of the above-mentioned information transmission system.

[Drawing 6] It is drawing for explaining the accounting information under demand sent to the above-mentioned accounting server from the above-mentioned client (settlement-of-accounts information).

[Drawing 7] It is drawing for the demand from the above-mentioned accounting server explaining the information on the ticket for connection published in the above-mentioned camera server.

### [Description of Notations]

100 Information Transmission System  
110 Camera Server  
111 Camera Equipment  
112 Ticket Judging Section  
113 Image Acquisition Section  
114 Image Transmitting Section  
115 Database for Connection Ticket Registration  
116 Ticket Issue Request Receptionist Section  
117 Ticket Issue Section  
118 Ticket Transmitting Section  
119 Image Demand Receptionist Section  
120 Accounting Server  
121 Accounting Information Database  
122 Purchase Receptionist Section  
123 Accounting Information Judging Section  
124 Ticket Issue Request Transmitting Section  
125 Ticket Receive Section  
126 Ticket Transmitting Section  
130 Client  
131 Ticket Purchase Demand Section  
132 Ticket Receive Section  
133 Image Demand Section  
134 Image Receive Section